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The impact of analysis

Arms Control Compliance and Intelligence

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Most intelligence professionals have an opinion on the extent to which intelligence analysis is considered in, or influences, policy decisions. This opinion is usually something like "if intelligence supports policy, it has an impact; if not, intelligence is ignored by the policymakers." Maybe this puts the case too nakedly, and certainly the extent to which this judgment holds depends largely on the administration and the individual policymaker. It could even be argued that how our analysis is used is largely irrelevant to how we do our work, so long as our conclusions are not subject to policy influence and so long as we create a paper trail for use, particularly when the Congress begins to debate administration policy. But most of us want to know what impact our work is having.

It is often difficult to determine to what use intelligence analysis is put. A US decision to take some action, or refrain from some action, depends on many factors—cost, reaction of our allies, practical feasibility—so even careful consideration of intelligence judgments is only part of the equation. There is, however, one area in which the contrast is more starkly drawn. This is in the area of arms control.

The DCI and Arms Control

The Director of Central Intelligence (DCI) is engaged in (b)(1) preparation of US negotiating positions and bottom lines; (b)(1) monitoring with national technical means of verification, and development of compliance judgments. Most of the decisions regarding treaty provisions are made by the

National Security Council (NSC) and are therefore "policy" decisions. Nevertheless, the DCI is an influential player in these decisions when they have an intelligence dimension, as do all decisions related to verification. All this is in addition to the DCI's traditional role of protecting intelligence sources and methods.

There also is an arms control role for the DCI in his relationship with the Congress, and this role is substantively much the same as when supporting the executive branch. The House and Senate oversight committees and the Senate Foreign Relations Committee (SFRC) are the Congressional elements most often interested in the progress of arms control negotiations and the capability of the Intelligence Community (IC) to collect data and make assessments concerning Soviet compliance with treaties being negotiated, as well as treaties in effect. The oversight committees maintain a continuing interest; the SFRC interest grows as negotiations approach their conclusion, and it peaks during the treaty ratification hearings. Because final treaty provisions may not always allow maximum feasible monitoring, the Congress is especially concerned about the DCI's efforts in this regard. That is, was the administration, and especially the NSC and the president, told of IC monitoring capabilities and concerns as the negotiations proceeded, was the case for greater monitorability made strongly, and what were the trade-offs when other considerations prevailed?

In the early stages of preparing US negotiating positions, and during the negotiations themselves, it is the responsibility of the DCI representatives to protect and enhance monitoring capabilities through appropriate treaty provisions and to provide judgments to the policymakers on how well

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we can monitor the provisions being negotiated. The function here is more than merely advisory, because it is often necessary to argue for provisions that enhance monitoring.

Even though policy officials often nod in the direction of "effective verification," political and resource considerations frequently get in the way of best-case monitoring provisions. Therefore, because there is never 100-percent monitoring confidence, and usually much less, there can exist a state of tension between the DCI and other elements of the government.

While monitorability always remains the principal DCI concern, as negotiations proceed other aspects of the prospective treaty also become important. For instance, in this new era of burgeoning on-site activities, DCI representatives must pay close attention to on-site inspection (OSI) provisions.

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A treaty goes into effect after the Senate has provided its advice and consent, and the instruments of ratification are exchanged between the parties. At this point, the IC role becomes operational. Using intelligence resources, the traditional IC treaty monitoring function is to follow Soviet activities pertaining to treaty provisions and to assess their meaning. National technical means of verification are important resources in this regard, but other resources also contribute.

OSI is a new feature of treaty monitoring. Starting first with the INF treaty, OSI has become a standard part of the verification regimes for all current negotiations.

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Monitoring and Verification

One of the lessons an intelligence officer must learn when first becoming engaged in arms control activities is the distinction between "monitoring" and "verification." Monitoring is the use of intelligence collection and analysis to determine what the Soviets are doing regarding activities associated with arms control treaty provisions. Verification is the judgment of whether or not the Soviet activities are in compliance with the treaties. Monitoring is collection of data and analysis of what the data mean. Verification is a political judgment for political purposes. It may have some relationship to the intelligence analysis results, but it also may not. Monitoring is performed by the IC; verification judgments are made by policymakers, primarily the NSC staff, with the advice of all agencies involved.

It might be argued that the definitions present a distinction without a difference. This presumes

that policymakers hear what the intelligence analysts say, believe what they bear, and use what they are told without regard to politics or ideology. The focus of this article is narrowed to the Threshold Test Ban Treaty (TTBT), which was signed in Moscow on 3 July 1974.

A second nuclear threshold treaty, the Peaceful Nuclear Explosions Treaty (PNET), was signed on 28 May 1976. It exists only to close loopholes in the TTBT, and it is not central to this article.

History of the Treaties

The principal provision of the TTBT is that each party undertakes not to conduct underground tests of nuclear weapons with yields greater than 150 kilotons. The treaty addresses only underground tests, because an earlier treaty, the Limited Test Ban Treaty, prohibits all nuclear tests that are not underground.

Both sides recognized two difficulties associated with the TTBT. The first has to do with the large uncertainties in nuclear yield estimates obtained through national technical means. These uncertainties have been a factor in why this treaty has not been ratified. The second difficulty is that physicists and engineers who design and build nuclear weapons cannot with certainty estimate the precise yield that will occur when the weapon is detonated. Even after the fact, nuclear weapon specialists cannot determine the yield to better than 10-percent accuracy.

In the context of this second difficulty, the sides reached an understanding that was made part of the public record. The statement of understanding is that:

Both Parties will make every effort to comply with all the provisions of the TTBT Treaty. However, there are technical uncertainties associated with predicting the precise yields of nuclear weapon tests. These uncertainties may result in slight, unintended breaches of the 150-kiloton threshold. Therefore, the two sides have discussed this problem and agreed

that: (1) one or two slight, unintended breaches per year would not be considered a violation of the Treaty; (2) such breaches would be cause for concern, however, and, at the request of either Party, would be the subject for consultations.

The US also stated that while it would not consider such slight, unintentional breaches as violations, it would nevertheless carefully review each such breach to ensure that it is not part of a general attempt to exceed the confines of the treaty.

There is still sufficient imprecision in these statements to allow reinterpretation of the definition of compliance. For instance, no one knows what is meant by a "slight breach," and the interpretation is likely to vary considerably for reasons of physics, application, and politics. Another obviously important loophole is the word "unintentional."

The TTBT was not submitted to the Senate for advice and consent associated with ratification until July 1976, after the PNET was signed. For a variety of political reasons, these treaties still have not been ratified, even though President Reagan resubmitted them to the Senate in January 1987.¹ Nevertheless, each party has indicated its intent to comply with the treaty pending ratification, each party has accused the other of violating the treaty, and both parties claim not to have violated the treaty.

A number of related bilateral and unilateral occurrences have taken place since these treaties were signed. Comprehensive Test Ban negotiations were started and broken off, the Soviet Union declared a moratorium on nuclear testing that lasted for 18 months, and the two sides began Nuclear Testing Experts' Meetings that lasted over a year, and which have led to the Nuclear Testing Talks, full-scale negotiations aimed at rewriting the verification protocols so that the treaties can

¹ The treaties with their new protocols were submitted to the Senate in June 1990 for advice and consent to ratification, which was given in September 1990. The treaties entered into force in December 1990.

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be ratified. Meanwhile, the IC continues to assess Soviet nuclear testing and the US administration continues to decide which tests are violations.

Teleseismic Monitoring

The only monitoring capability of any consequence for the TTBT is the US ability to determine the yield of each and every Soviet nuclear test. The only way to do this at present is through the use of long-range seismic measuring instruments, called teleseismic monitoring. Workers in earthquake research discovered that shocks to the earth cause disturbances that radiate in all directions and travel for thousands of kilometers. This also is true for shocks originating from nuclear explosions. The same kinds of instruments are used for locating and measuring the strength of earthquakes and nuclear tests.

There are three steps in teleseismic monitoring. First, an explosion must be detected. There is a continuous background of natural and man-made disturbances, referred to as "noise," that makes detection difficult for low-level explosions. But for yields above about 10 kilotons detection is quite routine.

The second step is to discriminate between nuclear explosions and earthquakes or chemical explosions. There are certain differences in detail in the signals received from earthquakes and those from explosions, so that such discrimination is straightforward. Chemical explosions can be eliminated on practical grounds, again for explosions above about 10 kilotons. The mass of chemical explosives required for such large events is just too great to be assembled without detection by some other source.

The final step is the estimation of yield of the nuclear event. While the uncertainty for detection and discrimination is practically nil at large magnitudes of interest, particularly near and above the 150-kiloton threshold, the same cannot be said for yield estimation.

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The Soviet Nuclear Test Program

The USSR conducted its first nuclear weapons test on 29 August 1949 at the Semipalatinsk Nuclear Weapons Proving Ground. A second nuclear test site was established at Novaya Zemlya, with the first nuclear test held there on 21 September 1955. All tests were conducted on the surface, underwater, or in the atmosphere, until 11 October 1961, when the Soviets conducted their first underground nuclear test at Semipalatinsk. After the Limited Test Ban Treaty (LTBT) went into effect in October 1963 banning all tests in the atmosphere, outer space, and underwater, the Soviet test program moved completely underground.

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The Compliance Report

Since 1984, the President has each year been responding to Public Law 99-145, which, in Section 1002, requires that:

Not later than December 1, 1984, and not later than December 1 of each following year, the President shall submit to the Congress a

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report (in both classified and unclassified versions) containing, with respect to the compliance of the Soviet Union with its arms control commitments, the findings of the President and any additional information necessary to keep the Congress currently informed.

The report is an interagency product. It contains, for each treaty, a section describing related Soviet activities, a history of compliance evaluation, compliance analysis, and a finding. The finding is debated among the agencies of the government, but the final wording is decided by the NSC, and it contains the political judgment regarding compliance. In the 1 December 1988 report, the President found the Soviets to be in "likely" violation. This is consistent with the judgment made in previous years.

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